Rules Update & Effective Procedures

2016 Virginia Pipeline Safety Conference

Sean Wallace – VA SCC

Agenda

* NPRMs
* Final Rules
* Advisory Bulletins
* Effective Procedures

Rulemaking Process

Gas NPRMs can be found here

FEDERAL REGISTER

The Daily Journal of the United States Government

or linked on the PHMSA website

NPRM Updates

Safety of Gas Transmission and Gathering Lines Docket # PHMSA-2011-0023

ANPRM, published September 25, 2011

NPRM, published April 8, 2016

* The overall goal of this proposed rule is to increase the level of safety associated with the transportation of gas by proposing requirements to address the causes of recent incidents with significant consequences, clarify and enhance some existing requirements, and address certain statutory mandates of the Act and NTSB recommendations.

Safety of On-shore Hazardous Liquid Pipelines Docket # PHMSA-2010-0229

ANPRM, published October 18, 2010

NPRM published October 13, 2015

* In recent years, there have been significant hazardous liquid pipeline accidents, most notably the 2010 crude oil spill near Marshall, Michigan, during which almost one million gallons of crude oil were spilled into the Kalamazoo River. In response to accident investigation findings, incident report data and trends, and stakeholder input, PHMSA published an ANPRM and NPRM.

Plastic Pipe Rule
Docket # PHMSA-2014-0098

NPRM published May 21, 2015

* PHMSA is proposing to amend the natural and other gas pipeline safety regulations (49 CFR part 192) to address regulatory requirements involving plastic piping systems used in gas services. These proposed amendments are intended to correct errors, address inconsistencies, and respond to petitions for rulemaking.

Plastic Pipe Rule
Docket # PHMSA-2014-0098

NPRM published May 21, 2015

* Tracking and traceability
* Design factor for PE (.40 vs .32) or up to 150psi
* 2”-6” PA-11&12 with higher HDB (250 psi)
* Risers outside of services
* Class 1 mechanical fittings only
* Monitoring and cathodic protection for isolated fittings
* Storage and handling requirements written procedures
* New testing and design requirements
* New standards by PPI, ASTM, etc.

OQ, Cost Recovery, Accident/ Incident Notification, and Other Changes Docket # PHMSA-2013-0163

NPRM published Jul 10, 2015

* PHMSA is proposing amendments to the pipeline safety regulations to address requirements of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (2011 Act), and to update and clarify certain regulatory requirements.

EFVs in Applications other than Single-Family Residences Docket # PHMSA-2011-0009

NPRM published Jul 15, 2015

* Excess Flow Valves (EFVs), which are safety devices installed on natural gas pipelines to reduce the risk of accidents, are currently required for new or replaced gas service lines servicing single-family residences (SFR). PHMSA is proposing to make changes to part 192 to expand EFV requirements.

Final Rule Updates

Misc. Changes to Pipeline Safety Regulations Docket # PHMSA-2010-0026

Final Rule March 3, 2015….and September 30, 2015

* Impacts 49 CFR
  * 191, 192 and 195
* Effective
  * October 1, 2015 (except 192.305…)

Miscellaneous Final Rule

§ 192.305 Inspection: General.

* From…"Each transmission pipeline or main must be inspected to ensure that it is constructed in accordance with this part."
* To… "Each transmission line and main must be inspected to ensure that it is constructed in accordance with this subpart. An operator must not use operator personnel to perform a required inspection if the operator personnel performed the construction task requiring inspection. Nothing in this section prohibits the operator from inspecting construction tasks with operator personnel who are involved in other construction tasks."

Miscellaneous Final Rule

Leak Surveys for Type B Gathering Lines § 192.9

* Must perform leak surveys on Type B gathering lines in accordance with §192.706 and fix any leaks discovered.

Miscellaneous Final Rule

Qualifying Plastic Pipe Joiners

§ 192.285(c)

A person must be re-qualified under an applicable procedure once each calendar year at intervals not exceeding 15 months, or after any production joint is found unacceptable by testing under § 192.513.

Miscellaneous Final Rule

§ 192.3 Definitions.

Welder means a person who performs manual or semi-automatic welding.

Welding operator means a person who operates machine or automatic welding equipment.

Miscellaneous Final Rule

§ 192.243 Nondestructive testing.

(e) Except for a welder or welding operator whose work is isolated from the principal welding activity, a sample of each welder or welding operator's work for each day must be nondestructively tested, when nondestructive testing is required under § 192.241(b).

Miscellaneous Final Rule

§ 192.153 Components fabricated by welding.

(e) A component having a design pressure established in accordance with paragraph (a) or paragraph (b) of this section and subject to the strength testing requirements of § 192.505(b) must be tested to at least 1.5 times the MAOP.

Under Review!

Miscellaneous Final Rule

§ 192.503(e) General requirements.

If a component other than pipe is the only item being replaced or added to a pipeline, a strength test after installation is not required, if the manufacturer of the component certifies that the component has been:

(1) Tested to meet pipeline pressure

(2) Tested by manufacturer under a quality control program, and

(3) Carries a pressure rating

Miscellaneous Final Rule

§ 192.165(b)(3) Compressor stations: Liquid removal.

Be manufactured in accordance with section VIII ASME Boiler and Pressure Vessel Code (BPVC) and the additional requirements of §192.153(e) except that liquid separators constructed of pipe and fittings without internal welding must be fabricated with a design factor of 0.4, or less.

Miscellaneous Final Rule

§ 192.225(a), .227 & .229

* Revised to replace **Welder** with ***Welder or Welding Operator***

Miscellaneous Final Rule

§ 192.620(c) Alternative maximum operating pressure for certain steel pipelines.

§ 192.620(c)(1)

* Existing pipelines require 180 day notification before operation
* For new pipelines notification of 60 days prior to manufacture or construction activities

§ 192.620(c)(8)

* A Class 1 and Class 2 location can be upgraded one class due to class changes per § 192.611(a).

Miscellaneous Final Rule

§ 192.805 Qualification program.

Notification of "Significant" changes in OQ programs is required

Miscellaneous Final Rule

§ 192.65 Transportation of pipe.

(a) Railroad. In a pipeline to be operated at a hoop stress of 20 percent or more of SMYS, an operator may not install pipe having an outer diameter to wall thickness of 70 to 1, or more, that is transported by railroad unless the transportation is performed by API RP 5L1

Miscellaneous Final Rule

Other Changes:

* § 191.7 Report submission requirements.
* § 191.25 Filing safety-related condition reports.
* § 191.29 National Pipeline Mapping System.

Advisory Bulletin Updates

ADB 2016-05

Clarification of Terms Relating to Pipeline Operational Status

* Published August 16, 2016
* PHMSA regulations do not recognize an "idle" status for a hazardous liquid or gas pipelines. The regulations consider pipelines to be either active and fully subject to all parts of the safety regulations or abandoned. The process and requirements for pipeline abandonment are captured in §§ 192.727 and 195.402(c)(10) for gas and hazardous liquid pipelines, respectively. Pipelines abandoned after the effective date of the regulations must comply with requirements to purge all combustibles and seal any facilities left in place. The last owner or operator of abandoned offshore facilities and abandoned onshore facilities that cross over, under, or through commercially navigable waterways must file a report with PHMSA. PHMSA regulations define the term "abandoned" to mean permanently removed from service.

ADB 2016-04

Ineffective Protection, Detection, and Mitigation of Corrosion Resulting From Insulated Coatings on Buried Pipelines

* Published June 21, 2016
* Gas and Liquid Operators should review their operating, maintenance, and integrity management activities to ensure that their insulated and buried pipelines have effective cathodic protection systems, including coating systems to protect against cathodic protection shielding and moisture under the coatings with higher operating temperatures, and in-line inspection tool findings are accurate, verified, and the in-line tools are appropriate for the pipeline threat.

ADB 2016-04

Operators must have and implement procedures to operate, maintain, assess, and repair their pipelines. These procedures for insulated and buried pipelines should take into consideration:

ADB 2016-04

* The need for coatings and cathodic protection systems to be designed, installed, and maintained so as not to foster an environment of shielding and moisture that can lead to excessive external corrosion growth rates and pipe steel cracking such as stress corrosion cracking.

ADB 2016-04

* Coatings for buried, insulated pipelines that may result in cathodic protection "shielding" yet still comply with 49 CFR part 192, subpart I or 49 CFR part 195, subpart H. Inadequate corrosion prevention may be addressed through any one or more methods, or a combination of methods, including, but not limited to, the following:
  * Replacing insulated and buried pipelines with compromised coating systems or inadequate cathodic protections systems;
  * Repairing or re-coating compromised portions of the coating on insulated and buried pipelines to ensure adequate corrosion control; or
  * Taking other ***special precautions*** if an operator suspects that adequate cathodic protection cannot be provided due to shielding resulting from insulated coatings that have become disbonded.

ADB 2016-04

* Advanced ILI data analysis techniques to account for the potential growth of CUI, including interaction criteria for anomaly assessment.

ADB 2016-04

* ILI data, subsequent analysis of the data, and pipeline excavations that:
  * Confirm the accuracy of the ILI data to characterize the extent and depth of the external corrosion and ILI tolerances and unity charts;
  * Follow the ILI guidelines of API Standard 1163, "In-Line Inspection Systems Qualification Standard" 2nd edition, April 2013, (API Std. 1163) for ILI assessments;
  * Use additional or more frequent reassessment intervals and confirmations when the insulated and buried pipeline external coating, shields the pipeline from CP, retains moisture on insulated coating systems, and operates at higher operating temperatures; and
  * Assess and mitigate operational and environmental conditions in shielded and insulated coatings that lead to excessive corrosion growth rates, pipe steel cracking, and all other threats.

ADB 2016-03

Dangers of Abnormal Snow and Ice Build-up on Gas Distribution Systems

* Published February 11, 2016
* To remind owners and operators of the need to:
  * (1) monitor the potential impact of excessive snow and ice on these facilities; and
  * (2) inform the public about possible hazards from snow and ice accumulation on regulators and other pipeline facilities.

ADB 2016-03

PHMSA is advising operators of petroleum gas and natural gas pipeline facilities, regardless of whether those facilities are regulated by PHMSA or state agencies, to consider the following steps to address the safety risks from accumulated snow and ice on pipeline facilities:

ADB 2016-03

* Notify customers and other entities of the need for caution associated with excessive accumulation and removal of snow and ice. Notice should include the need to clear snow and ice from exhaust and combustion air vents for gas appliances to:
  * (a) Prevent accumulation of carbon monoxide in buildings; or
  * (b) Prevent operational problems for the combustion equipment.

ADB 2016-03

* Pay attention to snow and ice related situations that may cause operational problems for pressure control and other equipment.
* Monitor the accumulation of moisture in equipment and snow or ice blocking regulator or relief valve vents which could prevent regulators and relief valves from functioning properly.

ADB 2016-03

* The piping on service regulator sets is susceptible to damage that could result in failure if caution is not exercised in cleaning snow from around the equipment. Where possible, use a broom instead of a shovel to clear snow off regulators, meters, associated piping, propane tanks, tubing, gauges or other propane system appurtenances.

ADB 2016-03

* Remind the public to contact the gas company or designated emergency response officials if there is an odor of gas present or if gas appliances are not functioning properly. Also, remind the public that they should leave their residences immediately if they detect a gas or propane odor and report the odor to their gas company, propane operator or designated emergency response officials.

ADB 2016-01

On July 15, 2011, NuStar Pipeline Operating Partnership, L.P. reported a 4,200 gallon (100 barrels) anhydrous ammonia spill in the Missouri River in Nebraska requiring extensive environmental response and causing supply disruption.

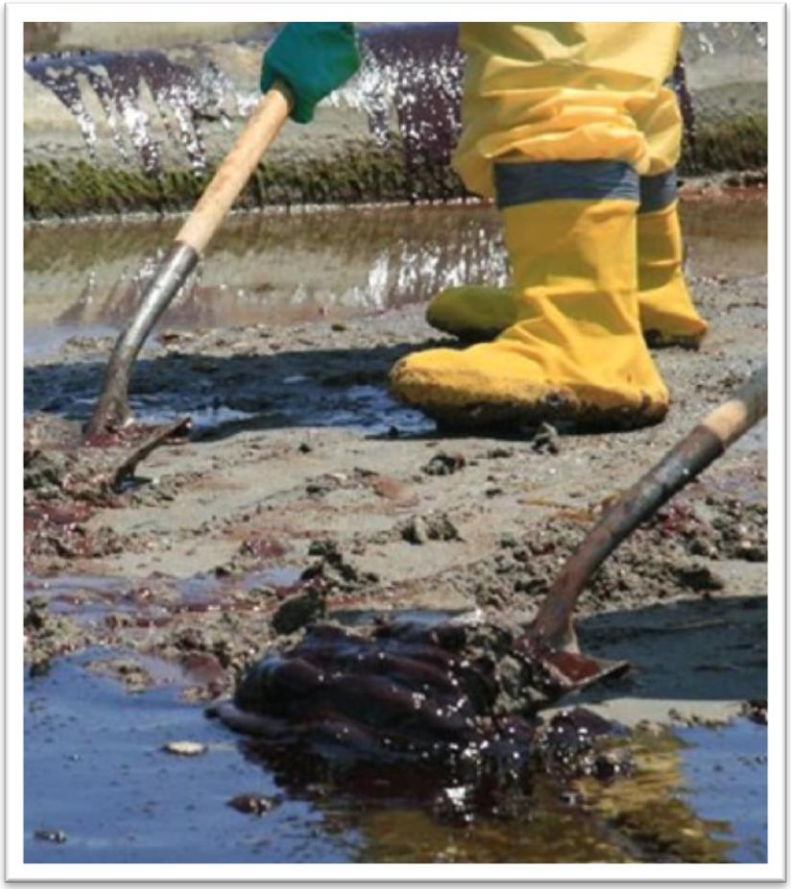
* The 6-inch-diameter pipeline was exposed by scouring during extreme flooding.

ADB 2016-01

On July 1, 2011, ExxonMobil Pipeline Company experienced a pipeline failure near Laurel, Montana.

* 63,000 gallons of crude oil spilled into the Yellowstone River.
* PHMSA's accident investigation found the rupture was caused by channel migration and river bottom scouring, leaving a large span of the pipeline exposed to prolonged current forces and debris washing downstream in the river. Those external forces damaged the exposed pipeline.

ADB 2016-01



On January 17, 2015, a breach in the Bridger Pipeline Company's Poplar System resulted in another spill into the Yellowstone River near the town of Glendive, Montana, releasing an estimated 28,434 gallons of crude oil into the river and impacting local water supplies.

* Preliminary information indicates over 100 feet of pipeline was exposed on the river bottom, and a release point was near a girth weld.

ADB 2016-01

On August 13, 2011, Enterprise Products Operating, LLC discovered a release of 28,350 gallons (675 barrels) of natural gasoline in the Missouri River in Iowa.

* The rupture, according to the metallurgical report, was the result of fatigue crack growth driven by vibrations in the pipe from vortex shedding.

ADB 2016-01

Potential for Damage to Pipeline Facilities Caused by Flooding, River Scout, and River Channel Migration

* Published January 19, 2016
* Severe flooding can adversely affect the safe operation of a pipeline. Operators need to direct their resources in a manner that will enable them to determine and mitigate the potential effects of flooding on their pipeline systems in accordance with applicable regulations. Operators are urged to take the following actions to prevent and mitigate damage to pipeline facilities and ensure public and environmental safety in areas affected by flooding:

ADB 2016-01

* Utilize experts in river flow, (e.g. hydrologists), to evaluate a river's potential for scour or channel migration at each pipeline river crossing.

ADB 2016-01

* Evaluate each pipeline crossing a river to determine the pipeline's installation method and determine if that method (and the pipeline's current condition) is sufficient to withstand the risks posed by anticipated flood conditions, river scour, or river channel migration. In areas prone to these conditions and risks, consider installing pipelines using horizontal directional drilling to help place pipelines below elevations of maximum scour and outside the limits of lateral channel migration.

ADB 2016-01

* Determine the maximum flow or flooding conditions at rivers where pipeline integrity is at risk in the event of flooding (*e.g.*, where scour can occur) and have contingency plans to shut down and isolate those pipelines when those conditions occur.

ADB 2016-01

* Evaluate the accessibility of pipeline facilities and components that may be in jeopardy, such as valve settings, which are needed to isolate water crossings or other sections of pipelines.

ADB 2016-01

* Extend regulator vents and relief stacks above the level of anticipated flooding as appropriate.
* Coordinate with emergency and spill responders on pipeline locations, crossing conditions, and the commodities transported. Provide maps and other relevant information to such responders so they can develop appropriate response strategies.

ADB 2016-01

* Coordinate with other pipeline operators in flood areas and establish emergency response centers to act as a liaison for pipeline problems and solutions.
* Deploy personnel so that they will be in position to shut down, isolate, contain, or perform any other emergency action on an affected pipeline.

ADB 2016-01

* Determine if facilities that are normally above ground (*e.g.*, valves, regulators, relief sets, etc.) have become submerged and are in danger of being struck by vessels or debris and, if possible, mark such facilities with U.S. Coast Guard approval and an appropriate buoy.

ADB 2016-01

* Perform frequent patrols, including appropriate overflights, to evaluate right-of-way conditions at water crossings during flooding and after waters subside. Report any flooding, either localized or systemic, to integrity staff to determine if pipeline crossings may have been damaged or would be in imminent jeopardy from future flooding.

ADB 2016-01

* Have open communications with local and state officials to address their concerns regarding observed pipeline exposures, localized flooding, ice dams, debris dams, and extensive bank erosion that may affect the integrity of pipeline crossings.

ADB 2016-01

* Following floods, and when safe river access is first available, determine if flooding has exposed or undermined pipelines because of new river channel profiles. This is best done by a depth of cover survey.

ADB 2016-01

* Where appropriate, surveys of underwater pipe should include the use of visual inspection by divers or instrumented detection. Pipelines in recently flooded lands adjacent to rivers should also be evaluated to determine the remaining depth of cover. You should share information gathered by these surveys with affected landowners. Agricultural agencies may help to inform farmers of potential hazards from reduced cover over pipelines.

ADB 2016-01

* Ensure that line markers are still in place or are replaced in a timely manner. Notify contractors, highway departments, and others involved in post-flood restoration activities of the presence of pipelines and the risks posed by reduced cover.

ADB 2016-01

* If a pipeline has suffered damage or is shut-in as a precautionary measure due to flooding, the operator should advise the appropriate PHMSA regional office or state pipeline safety authority before returning the line to service, increasing its operating pressure, or otherwise changing its operating status. Furthermore, reporting a Safety-Related Condition as prescribed in §§ 191.23 and 195.55 may also be required.

Effective Procedures

Effective Procedures

* **Reactive**
  * Final Rulings
  * Advisory Bulletins
* **Proactive**
  * PSMS (API RP 1173)
  * Strong integrity programs – “beyond minimum”
  * Conference/industry exposure and knowledge
  * Great Communication!

Effective Procedures Definition

What is the correct definition of a procedure?

* (A) a surgical operation.
* (B) a fixed, step-by-step sequence of activities or course of action (with definite start and end points) that must be followed in the same order to correctly perform a task.

Effective Procedures Considerations

* Must always meet the Federal Minimum Safety Standards.
* Must be clear and concise.
* More is not always better. Focus on “relevant” information.
* Ask someone else to read the procedure, and then have them explain how the task/activity is to be performed.

Effective Procedures Regulatory Tools

* **192.605(b)(8) – Normal**
  * Periodically reviewing the work done by operator personnel to determine the effectiveness, and adequacy of the procedures used in normal operation and maintenance and modifying the procedures when deficiencies are found.
* **192.605(c)(4) – Abnormal**
  * Periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operation and taking corrective action where deficiencies are found.
* **192.615(b)(3) – Emergency**
  * Review employee activities to determine whether the procedures were effectively followed in each emergency.